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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992	)	ET Docket No. 93-7
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	

COMMENTS OF TELECABLE CORPORATION

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SUMMARY

TeleCable's corporate engineering staff has spent a significant portion of the last decade evaluating the technological characteristics of conditional access techniques, including addressable descrambling, negative traps, positive traps, interdiction, EIA-563 equipped decoders, and broadband descrambling.

TeleCable field tested EIA-563, previously known as Multiport, in Overland Park, KA, beginning in 1989. Although TeleCable's research shows that the majority of customers do not object to the presence of a settop decoder, the EIA/ANSI-563 decoder interface standard has the potential to greatly reduce interface problems among that segment of the population -- purchasers of new TVs and VCRs -- most likely to experience compatibility problems. Widespread incorporation of this standard into TV receiver and VCR manufacturing would assure compatibility without disruption or waste.

Scrambling as a conditional access technique is essential to be responsive to trends in cable television programming. A detailed study explains that consumers are demanding increased customization and choice, rather than "one-size-fits-all" tiers. Premium services are moving to multiplexing. Pay per view movie services are moving to near video on demand. Pay per view itself is moving away from "big events" to many niche events at low retail rates. Electronic

program guides and "smart" remotes will permit greater use of programs available on demand. Competition from other multichannel video providers will require more diverse program configurations. Scrambling is the only conditional access technology which can accommodate these developments. A technical and economic feasibility study examines all other known forms of "clear signal" security, analysing the costs and benefits of each. For example, the paper acknowledes that interdiction can make financial sense for particular applications in markets with select characteristics, but that if systems with more than 5,000 subscribers installed interdiction technology to replace addressable decoders, those systems would on average each lose $2.3 million over a nine year period.

TeleCable therefore concludes that the EIA/ANSI-563 decoder interface standard is the best medium term solution. It can be deployed relatively inexpensively, and utilized by those customers who are dissatisfied with present equipment arrangements. It will also continue the benefits of current rules, under which TV transport technology can evolve without

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INTRODUCTION

TeleCable Corporation submits these Comments on the equipment compatibility inquiry the Commission has commenced in this proceeding.

I. BACKGROUND

TeleCable Corporation, a Norfolk, Virginia based firm, serves approximately 700,000 subscribers in 21 cable television systems.

Each of TeleCable's 21 cable systems uses addressable decoding technology to support the offering of a wide variety of television programming on a discretionary basis. TeleCable operates more than 650,000 addressable decoders in its 21 cable systems. TeleCable's corporate engineering staff has spent a significant portion of its time during the past decade evaluating the technological characteristics and analyzing the costs and benefits of a wide variety of conditional access (security and control) techniques, including positive traps, interdiction, EIA-563[2] equipped decoders and broadband descrambling technology. TeleCable Corporation, therefore has a wide variety of experience with cable television conditional access technology and with cable-consumer electronics interface issues.

The purpose of this filing is to provide information in response to specific questions raised in the NOI.

II. RESPONSE TO THE NOI

A. EIA-563 Decoder Interface Standard

In an address to the joint NCTA-EIA consumer electronics compatibility advisory group on February 23, 1993, Commission

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[2] [redacted]

representatives described the need for short term, medium term and long term solutions. The following information on the EIA-563 Decoder Interface Standard addresses the medium term.

In its Notice of Inquiry, Paragraph 13, Consumer Equipment Features, the Commission asked the following question (among others):

> "- What features should a device incorporate to be considered cable compatible or cable ready?"

In Paragraph 14, Regulatory Program for Assuring Compatibility, the Commission asks

> "- To what extent could existing cable equipment be modified to be more compatible with TV receivers, VCRs and other consumer TV equipment (and how much would it cost and how long would it take to make the necessary changes), while still providing for adequate protection against theft of service?"
>
> "- What new methods for providing cable system security are being developed, when will they be available and how much would they cost (to both consumers and cable subscribers)?"

Based upon the results of its field trials of EIA-563 equipped decoders in Overland Park, Kansas, TeleCable believes that such decoder interface technology has the potential to eliminate many of the problems discussed in the NOI.

In 1987, shortly after the release of interim standard IS-15[3] by the joint EIA-NCTA Engineering Committee, TeleCable asked its supplier of addressable decoders, the Zenith Cable Products Division of Zenith Electronics Corporation, to develop Multiport compatible decoders. In 1988, TeleCable placed an order for approximately 100 units, an adequate number with which to conduct both technical and marketing tests. Zenith supplied the Multiport decoders to TeleCable in early 1989 and TeleCable performed technical tests to assure that the decoders performed properly.

TeleCable and several other cable operators, through discussions with the consumer electronics division of RCA[4], learned that RCA was offering 25" television sets equipped with Multiport connectors for sale to the general public. TeleCable selected Overland Park, Kansas as a test market and RCA provided TeleCable with a list of recent purchasers of Multiport equipped RCA TV sets. TeleCable also held meetings with local retailers to explain the benefits of the Multiport interface and provided literature to retailers to help promote the benefits to potential purchasers. Through these means, TeleCable was able to persuade approximately 50 owners of RCA Multiport equipped TV sets to participate in a trial.

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[3] Interim standard IS-15 was ultimately adopted as EIA standard 563.

[4] Now Thompson Consumer Electronics.

In mid 1989, TeleCable's marketing research department contacted

[redacted]

perceived lack of widespread support by the cable industry. However, the need for a flexible yet consumer friendly security means is far more acute in 1993 than in 1990. Therefore, prospects for support of EIA-563 are significantly better in 1993 than in 1990.

In 1992, TeleCable Corporation performed consumer research in two separate systems, each numbering approximately 50,000 subscribers. Approximately 400 customers were contacted in each system. TeleCable learned that only 20% to 25% of the customers in each system objected strongly to the presence of set top decoders. The majority of these respondents were owners of both VCRs and high end, late model TV sets. TeleCable believes that EIA/ANSI-563, Decoder Interface Standard offers a means to greatly reduce cable-consumer electronics interface problems among new TV and VCR purchasers, the market segment most likely to experience and voice compatibility problems. To summarize, TeleCable's research shows that compatibility problems are most acute in a particular consumer segment. EIA-563 technology effectively targets that segment.

TeleCable is willing to install EIA-563 compatible analog descramblers in the homes of customers who purchase EIA-563 compatible TV sets and VCRs but believes that Commission support will be necessary to achieve a nationwide standard. Further

information on TeleCable's Multiport trial in Overland Park, Kansas is contained in Appendix A to this document.

EIA-563 decoders have already been designed by cable suppliers and the time to produce EIA-563 decoders should be relatively short. The EIA-563 Decoder Interface Standard has a significant advantage over other strategies for change in that EIA-563 decoders are compatible with the existing base of addressable decoders in a system and can be introduced without disruption or waste.

B. The Continued Need for Scrambling

In its NOI, Paragraph 14, Regulatory Program for Assuring Compatibility, the Commission asks "To what extent, if any, should cable systems be restricted in the manner in which they encrypt or scramble their signals?"

TeleCable Corporation believes that trends in cable television programming in response to technological opportunities, regulation and consumer demand for more choice and control over viewing will require that future cable TV security and control

programming creation and packaging. For example, only scrambling will permit the offering of enhanced basic services on an a la carte basis. Because consumers will demand more choice and control over programming, scrambling technology and descramblers are likely to be used for many more years.

To support this belief, TeleCable has included as Appendix B to this document, a paper entitled "Future Trends in Cable Programming and the Implications for Conditional Access Technology", by L. Patrick Mellon and Nicholas E. Worth. The paper discusses the following programming trends in cable television:

1. Consumers generally are demanding increased customization of program selections, rather than standardized "basic" services offering relatively limited choice of viewing time and channels. Cable operators will be creating smaller "affinity tiers" of satellite programming in order to contain retail costs and to promote consumer choice. The movement of advertisers toward a "target segment" analysis will reinforce the movement toward multiple affinity tiers.

2. Premium services will move toward near video on demand and to multiplexing in order to provide greater viewing options and arrest diminishing pay penetration.

Premium will also be sold without tier and even, regulations permitting, without basic.

3. Pay-per-view will move away from "big events" to many niche events at low retail rates.

4. Electronic program guides and "smart" remotes will permit greater use of programs available on demand.

5. [redacted]

"- What are the costs of the existing alternative techniques for preventing theft, unauthorized reception and addressing technical performance considerations, both to cable systems and subscribers?"

"- Which methods of scrambling and encryption systems do not interfere with the functions of subscribers' TV receivers, VCRs and other TV equipment?"

In Appendix C to this document, TeleCable has included a paper entitled, "Technical and Economic Feasibility of Deploying 'Clear Signal' Conditional Access Technology in Cable TV Systems". The paper attempts to answer the aforementioned questions by listing the costs and benefits of each known form of "clear signal" security. The paper deals with negative traps, positive traps, addressable traps, interdiction and broadband descrambling.

The primary costs of sole reliance on trap technology are opportunity costs which arise from the severe restrictions on program offerings. For example, traps alone will not efficiently support multiple levels of premium program, pay-per-view and tiered basic programming.

The paper includes a very thorough analysis of the costs vs. benefits of interdiction. The quantifiable costs and benefits of interdiction form the basis for a detailed financial analysis which concludes that if systems with more than 5,000 subscribers

installed interdiction[5] technology to replace addressable decoders, those systems would on average[6] each lose $2.3 million over a nine year period. The paper acknowledges that interdiction can make financial sense for markets with certain unique characteristics such as very high housing density or very high subscriber churn levels. Interdiction can also make sense for particular applications such as denying enhanced basic services to small numbers of homes who subscribe only to broadcast services. However, interdiction is not a panacea.

The paper discusses the potential benefits of broadband descrambling technology although that technology exists only in the form of a laboratory prototype with limited descrambling capacity.

III. CONCLUSION

Because subscribers will demand more choice and control over cable television programming, future conditional access technologies must be more flexible and have greater capacity than today's technologies. Because of limitations on rate increases, future conditional access technology must also be cost effective.

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[5] Interdiction is a technology in which those signals not purchased by a subscriber are electronically jammed outside the customer's premises and those signals purchased by the subscriber are provided in the clear.

[6] Average system size and characteristics were derived from Cable Television Facts, October, 1992, by NCTA. Systems with fewer than 5,000 subscribers were excluded from the analysis.

TeleCable's thorough research into "clear signal" technologies, including traps, interdiction and broadband descrambling, leads it to the conclusion that none of these technologies meet the aforementioned criteria. Therefore scrambling technology and descramblers are likely to be used for years to come. TeleCable therefore concludes that adoption of the EIA-563 Decoder Interface Standard by the FCC will provide the best medium term solution to the cable-consumer electronics compatibility problem.

In the shorter term, decoder accessories such as automatic RF bypass switches which supply signals directly to TV sets and VCRs, VCR Plus™ remote controls which greatly simplify recording, dual tuners which allow simultaneous recording of one channel while watching a different channel, and "IR blasters" which allow decoders to communicate directly with VCRs, will allow consumers to increase their viewing enjoyment. However these features should be provided only to consumers who opt to pay for them.

The rules should not compel customers to prematurely replace their TV receivers, nor compel customers to purchase equipment add ons if they are satisfied with use of a converter/descrambler—as were the majority of customers in our test markets. Nor should the rules establish a regime intolerant

of the deployment of decompression boxes, which will be needed in the long run if TV transport technology is to evolve into digital compression.

Respectfully submitted,

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March 22, 1993

APPENDIX A

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Paper Presented at the 1990 Cable Labs' Conference on the Consumer Electronics Interface

Multiport Decoders
At TeleCable Corporation
February, 1990

TeleCable Corporation operates 21 cable systems serving over 600,000 subscribers. Every one of our systems use addressable decoders, with a 73% average addressable penetration. We recognize the subscriber inconvenience created by the a top descrambler, especially to the VCR user. Several years ago I developed a series of brochures and video tapes on VCR hookups intended for both subscribers and TeleCable employees. TeleCable has long been committed to being as "subscriber friendly" as possible, and Multiport has the potential to address one of the industry's major friendliness issues. We at TeleCable have watched the development of IS-15 from its earliest stages, and have always been supportive. Today we are cautiously optimistic over Multiport. While the future may provide us with some type of off premises, or even on premises solution for delivering completely unscrambled services to the home, while retaining the ability to offer multi-pay and tiered packages, this is not available today, and the future of any such products is uncertain. What is available today is Multiport. Multiport works, and with the support of both the cable and the consumer electronics industry, we can go a long way towards making our scrambling technology unobtrusive to subscribers - today.

TeleCable has almost 60 Zenith Multiport decoders installed in subscriber homes. We are carefully deploying the Multiports at this time, while gathering as much data as possible prior to a full scale rollout. We have not evaluated other Manufacturers Multiport decoders, since almost all our addressable systems use the Zenith system. So far our experiences have been very good. I will share some subscriber survey results in a moment. Our system management and technical people seem very pleased with Multiport. TV dealers like it. TeleCable people can address a major concern of some subscribers - a problem heretofore without any real solution. TV dealers may see Multiport as a way to sell their more expensive models, while offering a truly "cable ready" product for the first time.

Our recent survey of 41 subscribers who have been using a Multiport decoder for several months shows, for example, that most subscribers are very pleased with Multiport, and their overall satisfaction with cable service has increased since the installation of the Multiport decoder. The most popular aspect of Multiport, mentioned by 78% of the subscribers surveyed, is being able to use their TV set remote control, and not having to use a separate remote for the cable box.

We see Multiport filling a real need. The decoders work quite well, and in our limited experience they have been completely reliable. Once we have some assurance that Multiport is here to stay we intend to make Multiport decoders available to any TeleCable subscriber with a Multiport equipped set.

Sure, Multiport is not perfect. Asking a subscriber to purchase a new television set may seem too much to ask. But new TV's are selling every day. Why not let the subscriber know the advantages of making their sure their next TV is ready for Multiport. Some may even make the decision to purchase a new set based on the availability of Multiport.

My objective in sharing TeleCable's Multiport experiences is to encourage more cable operators and more consumer electronics companies to support the Multiport concept, for more support is desperately needed for Multiport to succeed. Multiport works! Multiport is available today! We should give it the support it deserves and both our subscribers and our operations will benefit.

Charlie Kennamer
Vice President/Addressable Technology

IS 15 Survey
May 1989

DATE: _____
RESPONDENTS LAST NAME: _____
RESPONDENTS PHONE #: _____
SYSTEM: OP / SPR
SERVICE LEVEL: _____
PRODUCT: _____
DURATION OF SUBSCRIPTION: _____

Good evening _____, this is _____ calling from TeleCable, your cable TV company. How are you this evening? I'm with the Research Department in Norfolk, VA. I'm not selling anything. I'm only interested in your opinion.

1. Do you have an RCA set with the decoder connection at the back of the set and did TeleCable recently provide you with a decoder for your RCA set?
   ___ 1. yes
   ___ 2. no
   ___ 3. don't know (don't read)

1a. Have you been satisfied with the picture quality of the new decoder?
   ___ 1. yes
   ___ 2. no ---> problem ? (describe) _____
   ___ 3. indifferent

4. Now that you have an RCA TV set with the decoder connection in the back of the set, has your opinion of cable TV changed?
___ 1. yes
___ 2. no

4a. How has your opinion changed?
(Record in subscribers own words)

_____
_____
_____

4b. What do you feel was responsible for this change?

_____
_____
_____

5. Now that you have a TV set designed with a decoder connection at the back, how would you rate the following using a 10 point scale where '10' means excellent and '1' means poor.
How would you rate...
(a) your level of satisfaction with cable? _____

(b) the quality of reception you receive? _____

(c) cable TV as a value for the money? _____

6. Which of the following statements best describes how you might change your level of cable service in the near future? Do you plan to ...

___ 1. Add 1 or more pay (premium) channels
___ 2. Not change current level of service
___ 3. Disconnect 1 or more pay (premium) channels
___ 4. Disconnect all cable service
___ 5. don't know (Don't read)

6a. Why do you feel this way?
(Record in subscribers own words)

_____
_____
_____

7. What do you like the best about your RCA TV set with the decoder connected to the back of the set?
(Record in subscribers own words)

_____
_____
_____

8. What, if anything, would you like to see changed with your current cable TV service?
(Record in subscribers own words)

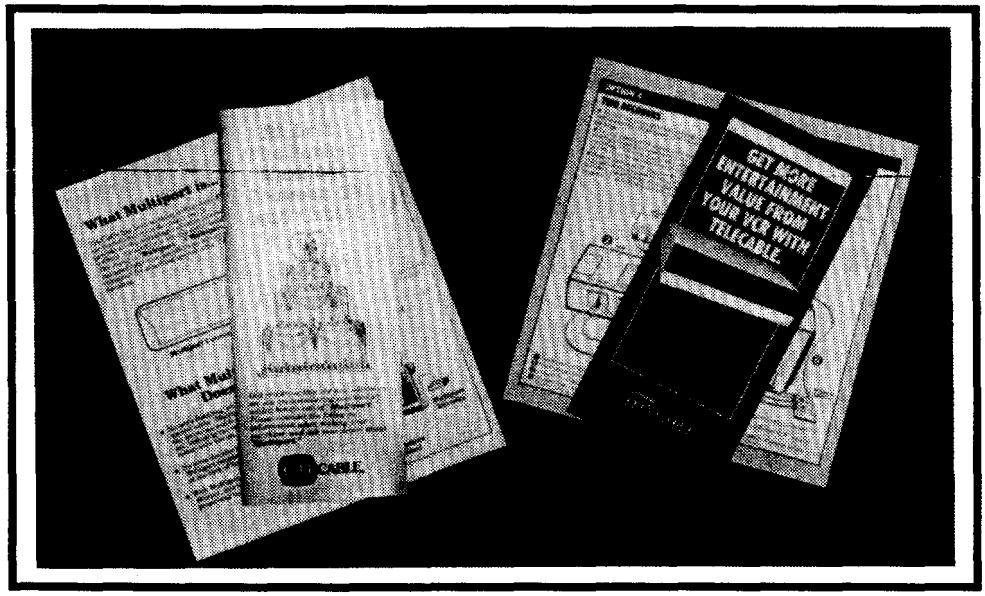
_____
_____
_____

TeleCable

TeleCable has used joint retailing relationships with consumer electronics retailers to explain and illustrate the VCR/Cable Interface. Especially in its dual cable system, TeleCable identified the VCR hookup as one of the most frustrating issues connected with cable television.

TeleCable's situation in several systems resulted in very poor consumer experience with the VCR/cable interface. The cable systems were dual cable, all services were scrambled, consumers had purchased lots of "cable-ready" sets, and consumer education was inadequate.

TeleCable set a goal to improve subscriber education and maximize for the subscriber his use of the VCR with cable programming. TeleCable designed a simple but effective brochure explaining various hookup situations and arranged with selected retailers to display the brochure in their stores and distribute them to VCR purchasers. The system's general observation was that their total VCR education project definitely reduced truck rolls and trouble calls. Best of all, when purchasers of VCRs needed to call a CSR, they had the brochure as a common base from which to communicate.



Charles Kennamer of TeleCable observes that TeleCable's efforts have paid off in continuing good relationships with local retailers. "If you devote the time, you can get the retailer on your side," he says. "If you don't, they're on the other side. They're not

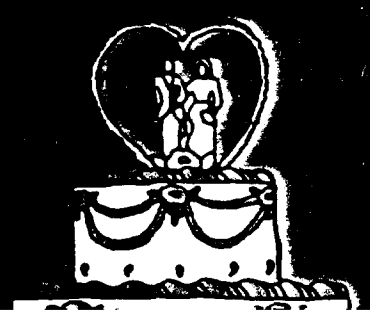
just neutral, they will sell against you." He cites examples of retailers who justify the cost of a VCR purchase by pointing out that the buyer can save money by dropping cable and renting tapes. Retailers then offer to finance a VCR for the same monthly charge as cable service.

Similar to Viacom's experience, retailers were more than willing to deal with the Multiport issue, since it enabled them to sell higher-end televisions. Additionally, retailers were acting as salespeople to sell the benefits of the higher-end sets with Multiport.

Retailers also welcomed the opportunity to display the VCR/cable hookup brochures, since it eliminated many questions, follow-up phone calls and displeased customers.

The end result of both TeleCable's joint retailing programs was happy cable subscribers and happy electronics purchasers who could make full use of all the features on their electronic components while enjoying cable television.

At Last! The Perfect Marriage Between TV and Cable!



Free Installation of a Multiport Decoder for your New TV Set!

If You are Currently a TeleCable Subscriber:

TeleCable will provide free installation of the new **Multiport** decoder for your new TV set! Just call TeleCable and ask for your **free** Multiport installation. TeleCable will send an installer to pick up your Zenith decoder (if you have one) and hook up the new Multiport decoder.*

And if you'd like to add premium channels to your service (such as HBO, Cinemax, Disney or Showtime), we'll also include **free** installation of those premium channels.*

If You are Not a